# PRESSURE REDUCING VALVE

## Model IR-120-3W-XZ

The BERMAD Pressure Reducing Valve is a hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure and opens fully upon line pressure drop.


**[1]** BERMAD Model IR-120-3W-XZ establishes reduced pressure zone, protecting laterals and distribution line.
**[2]** Combination Air Valve Model IR-C10
**[3]** Combination Air Valve Model IR-C30

### Features & Benefits

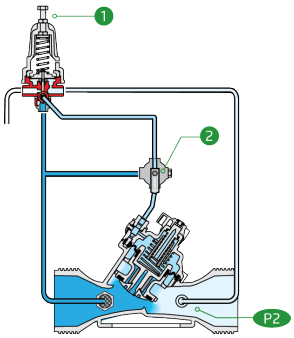
- Line Pressure Driven, Hydraulically Controlled
  - Protects downstream systems
  - Opens fully upon line pressure drop
- Engineered Composite Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection
  - Articulated flange connections that eliminate line bending and hydraulic stresses
  - Highly durable, chemical and cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity at low pressure loss
- Unitized "Flexible Super Travel" (FST) Diaphragm and Guided Plug
  - Accurate and stable regulation with smooth closing
  - Requires low actuation pressure
  - Prevents diaphragm erosion and distortion
  - Simple in-line inspection and service

### Typical Applications

- Automated Irrigation Systems
- Pressure Reducing Systems
- Systems Subject to Varying Supply Pressure
- Distribution Centers
- Energy Saving Irrigation Systems

### Operation:

The Pressure Reducing Pilot [1] commands the main valve to throttle closed should Downstream Pressure [P2] rise above pilot setting, and to open fully when it drops below pilot setting. The Manual Selector [2] enables local manual closing.

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## Technical Data

**Pressure Rating:**
150 psi

**Operating Pressure Range:**
7-150 psi

### Materials

**Body & Cover:**
Polyamide 6 & 30% GF

**Diaphragm:**
NR, Nylon fabric reinforced

**Spring:**
Stainless Steel

### Control Loop Accessories

**PR Pilot:** PC-SHARP-X-P

**Pilot Spring Range:**

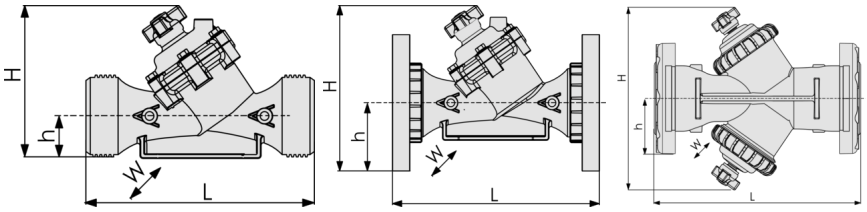
| Spring | Spring Color | Setting range |
|---|---|---|
| J | Green | 3-25 psi |
| K | Gray | 7-43 psi |
| **N** | **Natural** | **12-95 psi** |
| V | Blue & White | 15-150 psi |

*Standard spring - marked in bold*

**Tubing and Fittings:**
Polyethylene and Polypropylene

### Technical Specifications

For other patterns and end connection types, Please refer to BERMAD full engineering page.



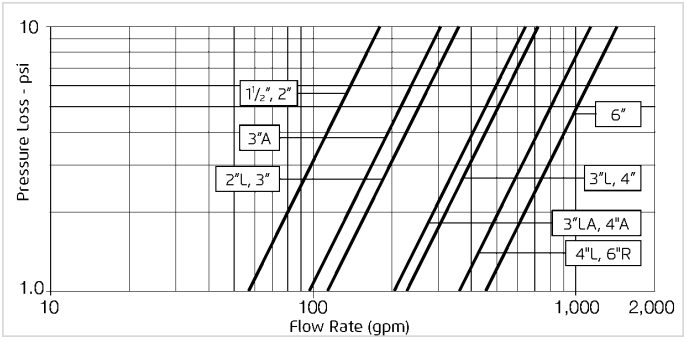

| Size | Pattern | End Connection | Weight (Lb) | L (In) | H (In) | h (In) | W | CCDV (Gal) | CV |
|---|---|---|---|---|---|---|---|---|---|
| 1½" ; DN40 | Oblique | Threaded | 2.4 | 7⅞ | 6⅞ | 1⅝ | 3⅜ | 0.026 | 58 |
| 2" ; DN50 | Oblique | Threaded | 2.7 | 9⅛ | 6⅞ | 1⅝ | 3⅜ | 0.026 | 58 |
| 2"L ; DN50L | Oblique | Threaded | 3 | 9⅛ | 7⅜ | 1¾ | 5⅜ | 0.033 | 116 |
| 2½" ; DN65 | Oblique | Threaded | 3 | 9⅛ | 7⅜ | 1¾ | 5⅜ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Threaded | 4 | 11¾ | 7⅞ | 2¼ | 5⅜ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Plastic Flanges | 6 | 12⅛ | 9⅝ | 4 | 7⅞ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Metal Flanges | 10 | 12⅛ | 9⅝ | 4 | 7⅞ | 0.033 | 116 |
| 3"L ; DN80L | Oblique | Threaded | 7 | 11¾ | 9⅛ | 2⅜ | 6⅝ | 0.136 | 231 |
| 3"L ; DN80L | Oblique | Plastic Flanges | 8.2 | 12⅛ | 12½ | 4 | 7⅞ | 0.136 | 231 |
| 3"L ; DN80L | Oblique | Metal Flanges | 10.1 | 12⅛ | 12½ | 4 | 7⅞ | 0.136 | 231 |
| 4" ; DN100 | Oblique | Plastic Flanges | 10 | 13⅞ | 13 | 4½ | 8⅞ | 0.136 | 231 |
| 4" ; DN100 | Oblique | Metal Flanges | 16.3 | 13⅞ | 13 | 4½ | 8⅞ | 0.136 | 231 |
| 4"L ; DN100L | Oblique | Plastic Flanges | 20.2 | 17½ | 13⅜ | 4½ | 9 | 0.253 | 393 |
| 4"L ; DN100L | Oblique | Metal Flanges | 24.7 | 17½ | 13⅜ | 4½ | 9 | 0.253 | 393 |
| 6"R ; DN150R | Oblique | Metal Flanges | 36 | 18½ | 14⅞ | 5⅞ | 11⅜ | 0.253 | 393 |
| 6" ; DN150 | Boxer | Grooved | 26 | 19 | 15¼ | 4 | 18¾ | 2x0.136 | 462 |
| 6" ; DN150 | Boxer | Plastic Flanges | 27.6 | 19⅞ | 15¼ | 5⅝ | 18¾ | 2x0.136 | 462 |

CCDV = Control Chamber Displacement Volume • Threaded = BSP & NPT are available. External thread is available for 2" and 2½" only. • Other End Connections are available on request. For dimensions and weights of adapters or valves with adapters please consult with customer service.

### Additional Features

| Code | Description | Size Range |
|---|---|---|
| M | Flow Stem (*Exclude sizes 4"L, 6"R) | 1½"-6" |
| 5 | Plastic Test Point | 1½"-4" |
| V3 | Victaulic PVC Adaptors 3" | 3" |
| V4 | Victaulic PVC Adaptors 4" | 4" |

### Flow Chart




### Differential Pressure & Flow Calculation

$$\Delta P = \left(\frac{Q}{Cv}\right)^2$$

Cv = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi